

SAN DIEGO HARBOR SAFETY PLAN

Mandated by
California Oil Spill Prevention and
Response Act of 1990



Disclaimer: The San Diego Harbor Safety Plan is not to be used for navigational purposes. The San Diego Harbor Safety Committee assumes no responsibility or any liability for any injury or damage resulting from the use or effect of any information in this publication.

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page No.</u>
A.	Executive Summary	2
B.	Oil Spill Hotline & Emergency Phone Numbers	5
C.	Local Notice to Mariners	6
D.	San Diego HSC Membership 2000	7
E.	Introduction	10
I.	Geographical Boundaries	12
II.	Harbor Conditions	13
	Weather Description of Harbor	
	Tides Accuracy of Depth Information	
	Currents Special Channel and Navigation Conditions	
	Sea Conditions	
III.	Aids to Navigation and Navigational Hazards	17
IV.	Anchorage and Anchorage Management	20
V.	Communications	24
VI.	Vessel Traffic Patterns	27
VII.	Tug Assist/Escort	33
VIII.	Vessel Traffic Service (VTS)	36
IX.	Bridge Management Requirements	37
X.	Competitive Aspects	37
XI.	Project Funding	37
XII.	Enforcement	38
XIII.	Harbor Safety Committee Recommendations & Accomplishments	39
XIV.	Implementation	43
XV.	Applicable Regulations and Guidelines	45
	Under-Keel Clearance Guidelines	
	Ballast Water Regulations	
	Non-Tanker Regulations	
	Tug Escort	
	Oil Pollution Act of 1990	
XVI.	Miscellaneous	46
	Pilotage Evaluation Limited Visibility Guidelines	

Appendix (Including List of Archived Items)

Tabbed Pages

EXECUTIVE SUMMARY

This Harbor Safety Plan is designed to provide mariners using the waters of San Diego Bay an up-to-date guide to critical navigation issues that will enhance vessel safety, with the ultimate goal of pollution prevention and protection of the region's valuable resources. This plan has been developed by the San Diego Harbor Safety Committee (HSC) as mandated in the California Oil Spill Prevention and Response Act (OSPRA) of 1990, as codified in Title 14, Division 1, of the California Code of Regulations. The Act intends to improve the prevention, removal, abatement, response, containment, clean up, and mitigation of oil spills in the marine waters of California. The Act (S.B. 2040) created harbor safety committees for the major harbors of the state of California:

"for the vessels within each harbor...(by preparing)....a harbor safety plan, encompassing all vessel traffic within the harbor."

Harbor Safety Committees were established for:

- San Diego
- San Francisco (including San Pablo and Suisun Bays)
- Los Angeles/Long Beach
- Port Hueneme
- Humboldt Bay

The San Diego Harbor Safety Committee consists of key industry and governmental experts, with thorough knowledge of the Bay, who support this effort on a voluntary basis. The San Diego Harbor Safety Committee (HSC) was sworn in on May 13, 1992 and held its first meeting on that date.

The Harbor Safety Plan

The main body of the Plan is divided into sixteen sections, twelve as required by California regulation, and two additional ones developed by the San Diego HSC; and Appendices as listed in the Table of Contents. The Appendices provide specific information on key issues and initiatives that effect vessel safety in San Diego Bay. To facilitate the use of this Plan, the primary sections and general information are contained in the main body of the plan. Appendices are 'tabbed' using corresponding letters for quick access.

The Process

The HSC/Harbor Safety Plan process is a long term, on-going effort requiring continually working on appropriate issues, with annual Plan updates. This Plan was updated November 29, 2000 and represents the latest version.

One of the key elements of the Harbor Safety Committee's charter is to make recommendations for improvements, and track those recommendations. For a complete summary of current recommendations made by the HSC, turn to Chapter XIII. A summary of implemented Harbor Safety Committee recommendations is included.

The full committee meets bi-monthly; with Chairman-appointed subcommittees meeting on an on-going basis. The sub-committees consist of special focus groups who review appropriate subject matter, and make recommendations to the full committee. All meetings are noticed and open to the public.

Plan Sections and Brief Description of Contents

- I **Geographic Boundaries.** A detailed description of the geographical boundaries of the harbor.
- II **Harbor Conditions.** A description of existing and expected conditions of weather, tidal ranges, and other factors.
- III **Aids to Navigation and Navigational Hazards.** An evaluation and list of the aids to navigation in the harbor, and list of navigational hazards.
- IV **Anchorage and Anchorage Management.** A description of the existing anchorages and any limitations to those anchorages.
- V **Communications.** A review and evaluation of the adequacy of current ship-to-ship and ship-to-shore communications used in the harbor area.
- VI **Vessel Traffic Patterns.** A description of the types of vessel which call on the ports or facilities within the harbor area, and an assessment of current safety issues.
- VII **Tug Escort/Tug assist.** A description of the usage of tug escorts in the harbor, including a procedure for a case-by-case determination of need based on specific criteria.
- VIII **Vessel Traffic Service (VTS).** Establishment of SDMIS for the Harbor Area.
- IX **Bridge Management Requirements.** An assessment of the physical limitations affecting vertical and horizontal clearances.
- X **Competitive aspects.** An identification and discussion of the economic impacts of implementing the provisions of the plan.
- XI **Project Funding.**
- XII **Enforcement.** An analysis of, and suggested mechanisms to, ensure that the provisions of the plan are fully and uniformly enforced with regularity.
- XIII **Harbor Safety Committee Recommendations.** Includes implemented recommendations.
- XIV **Implementation.** Provides an overview of implementation avenues for the recommendations contained in the Harbor Safety Plan.
- XV **Applicable Regulations and Guidelines.** Includes **Underkeel Clearance** Guidelines, **Ballast Water, Non-Tanker**, and **Tug Escort** Regulations, and the Oil Pollution Act of 1990.
- XVI **Miscellaneous. Pilotage Evaluation Report and Limited Visibility Guidelines** are included.

Appendices, and list of Archived Items.

Relationship Between the Harbor Safety Plan and the Area Contingency Plan

The Oil Pollution Act of 1990 (OPA 90) resulted in the formation of Area Committees and their development of a Regional Oil Spill, and Hazardous Substance Pollution Contingency Plan by the U.S. Coast Guard (Area Contingency Plan). The Area Committees ensure that comprehensive contingency plans are developed for all U.S. waters for response and cleanup of all oil spills. The area Contingency Plan is the plan for Federal and State actions which center on the on-scene coordinator for response to oil spills. The designated On-Scene Coordinator is the U.S. Coast Guard Captain of the Port. Coinciding with the development of the San Diego Harbor Safety Plan was the update of the Area Contingency Plan.

NOTE

It is recommended that mariners using the Bay familiarize themselves with the Harbor Safety Plan, although it is not to take the place of required vessel navigation and safety standards.

Government Agencies

Office of Oil Spill Prevention and Response:	1-800-268-0991 www.dfg.ca.gov/ospr/
California Coastal Commission:	(415) 904-5200 www.coastal.ca.gov
U.S. Coast Guard:	(619) 683-6470 www.uscg.mil/safeports/west_coast/san_diego
Port of San Diego:	(619) 686-6200 www.portofsandiego.org

Red Tab Section

EMERGENCY RESPONSE PROCEDURES

In order to provide protection to the sensitive resources in San Diego Bay, it's essential that every effort be made to prevent inappropriate discharges to the water, and respond to other emergencies that may result in environmental impacts. When such an incident does occur, however, it's critical to make sure it's reported immediately, and to the right agency. The following "user-friendly" guide provides the necessary information.

**Anyone causing, observing, or discovering an emergency situation CALL IMMEDIATELY:
(619) 683-6470 San Diego Marine Safety Office**

Take immediate action to contain and control the incident, without risking personal health and safety. When on-scene, Coast Guard MSO (oil spills)/San Diego Fire Department (HAZ-MAT spills) will assume responsibilities as On-Scene Incident Commander until response actions are complete.

Provide as much information as possible including location, type of material (if known), quantity, any immediate threat to life or health, and any impacts to natural resources.

If reportable, make the following notifications:
ALL LOCATIONS

- | | |
|---|----------------|
| 1. USCG National Response Center (NRC) | (800) 424-8802 |
| 2. State Office of Emergency Services (OES) | (800) 852-7550 |

If spill is a **Reportable Quantity (RQ)**, make the following voice reports:

Reportable Quantity (RQ)

- | | |
|---------------------------------------|---|
| Oil (on water) | Produces a sheen or discoloration on the water's surface. |
| Oil (on land) | SD Fire Department will advise. |
| Hazardous Material (on water or land) | San Diego or SD Fire Department will advise |

Harbor Police (619) 686-6585
Port of San Diego (619) 686-6200
U.S. Navy Port Ops. (619) 556-1433

Marine Safety Office (619) 683-6470
S.D. Fire Dept/Emergency Services (619) 974-9891
24 Hr. Navy Regional Duty Office (619) 524-2314

Eleventh Coast Guard District-Navigable Waters of the United States Naval Vessel Protection Zone:

The Coast Guard has established temporary regulations for the safety or security of U.S. naval vessels in the navigable waters of the United States. Effective immediately, Naval Vessel Protection Zones are established within 500 yards of any U.S. naval vessel. This includes any vessel owned, operated, chartered, or leased by the U.S. Navy or under the operational control of the U.S. Navy. All vessels within 500 yards of a U.S. naval vessel shall operate at the minimum speed necessary to maintain a safe course and proceed as directed by the official patrol (a Coast Guard commissioned, warrant or petty officer; or the Commanding Officer of a U.S. naval vessel or his or her designee). No vessel or person is allowed within 100 yards of a U.S. naval vessel, unless authorized by the official patrol. Vessels requesting to pass within 100 yards of a U.S. naval vessel shall contact the official patrol on VHF-FM ch.16.

Violations of these regulations are punishable as a felony.

LNM 41/01 dated 09 Oct 2001.

Notification of Arrival in US Ports:

The Coast Guard temporarily changed notification requirements for vessels bound for or departing from U.S. Ports. Through 15 Jun 2002 all notice of arrival reports will be submitted to Coast Guard's National Vessel Movement Center rather than the individual Captain of the Port. The full text of the Temporary Final Rule can be found in the 04 Oct 2001 edition of the Federal Register. A copy can be requested by contacting Rob Griffiths at (310) 732-2020 or

Rgriffiths@d11.uscg.mil.

*For additional current information, refer to www.sdmis.com or the Local Notice to Mariners, available on the web at www.navcen.uscg.gov/lnm/d11.

San Diego Harbor Safety Committee Membership 2003

Organization membership as set out in law, first ten serve as voting members. Last four organizations serve as non-voting liaisons. Principle representative listed first, then alternate. Any Harbor Safety Committee assignment is noted in bold italics.

1. Pilots Organization

Member

Capt. Ed Silva, Jr.
Senior Chief Pilots
San Diego Bay Pilots
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San Diego, CA 92106
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Fax: (619) 221-0903

Alternate

Capt. Eric Ireland
President, San Diego Bay Pilots Assoc.
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2. Commercial Fishing/Pleasure Boats

Serves as Chair of the San Diego Harbor Safety Committee

Member

Capt. Debra Marks
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Serves as Education Subcommittee Chair

Alternate

Bill Lewis
Vice-President
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3. Dry Cargo Vessel Operators

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4. Tanker Operations

Serves as Navigation Safety and Piloting Chair

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Business: (858) 273-1858
Alt. Number: (858) 274-1858
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Ira Buck Beaver
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11. Commercial Fishing

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2. United States Navy

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3. Oil Spill Prevention & Response

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4. San Diego BayKeeper (secretariat)

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Introduction

San Diego Bay entrance is 10 miles NW of the Mexican border. The Bay is 14 miles long and ranges from 55 feet deep at the entrance to a few feet deep at the extreme southern end at the head of the Bay. The Bay is considered one of the finest natural harbors in the world, and affords excellent protection in most weather. A low narrow sand spit, which expands to a width of 1.6 miles at Coronado North Island, on its northern end, separates the Bay from the Pacific Ocean at Coronado Roads.

San Diego Bay encompasses 12,000 acres and is 14 miles long and, at half-tide, has an area of 18 square miles and a water volume of 300 million cubic yards. It lies entirely within the County of San Diego and is bounded by five cities: San Diego, National City, Chula Vista, Imperial Beach, and Coronado. Ecologically, San Diego Bay is considered one of the most important embayments of the California coast and has nationally and internationally significant natural resources. The Bay is a major stop on the Pacific Flyway and many species of birds, finfish, shellfish, turtles, bottom-dwelling invertebrates, and plants are dependent on the Bay. Over 50 endangered, threatened, or rare species are found in San Diego Bay. The Bay is also home to a large sportfishing and whale migration observation fleet. The Pt. Loma kelp bed, near the mouth of the Bay, is world famous as a diving, snorkeling, and surfing location.

San Diego Bay's extensive shelter from ocean waves make it one of the finest natural harbors in the world. Three separate marine terminals provide facilities for a variety of commercial cargo handling and cruise ship operations. Principal cargo include lumber, newsprint, fertilizer, fresh, frozen, and canned foodstuffs, automobiles, palm oil, minerals, and fuel oil. Passenger cruise ships frequent the harbor on a daily basis.

One third of the U.S. Naval Pacific Fleet is home ported in San Diego Bay, making it instrumental in our National Defense. The Navy has designated San Diego Bay as a West Coast 'megaport'.

The San Diego area is a major tourist and convention destination.

General information on San Diego Bay can be obtained from:

The San Diego Unified Port District
(619) 686-6200 or www.portofsandiego.org

San Diego BayKeeper
(619) 299-4484 or www.sdbaykeeper.org

The Environmental Health Coalition
(619) 235-0281 or www.environmentalhealth.org

The San Diego Convention and Visitors Bureau
(619) 232-3101 or www.sandiego.org

UCSD Science Library Ocean Links
<http://scilib.ucsd.edu/sio/ocean/>

San Diego Bay 'Supercomputer Oil-Spill Modeling'
<http://sdbay.sdsc.edu/>

I. GEOGRAPHICAL BOUNDARIES

“This section shall provide a detailed description of geographical boundaries of the harbor and include large scale charts of the entire harbor area.”

The San Diego Harbor Safety Plan study area includes state waters to three nautical miles from the Mexican border at 32° 32.0' N northward to the San Diego County line at 33° 22.5' N and includes all the navigable reaches of San Diego Bay. These boundaries coincide with the boundaries of the Area Contingency Plan, and include an oil transfer facility at Encina. The San Diego Harbor Safety Plan is primarily concerned with navigational safety of San Diego Bay and its approaches.

Approaches to San Diego Bay entrance are straightforward and can be made from north through west to south-southwest. There are no designated approach lanes to the entrance Buoy “SD”. There are submarine safety lanes designated on Chart #18765 and the U.S. Navy does extensive surface, subsurface, and air training off the coast. All live fire and intensively interactive naval exercises are held well off the immediate coastline and do not encroach on the vicinity of the harbor approaches.

The Los Angeles/Long Beach Harbor Safety Committee has convened a subcommittee that will oversee all of the active offshore moorings, including the offshore mooring at Encina. This Subcommittee will include a representative from the San Diego Harbor Safety Committee, who will report back to the San Diego Harbor Safety Committee. A description of the Encina Facility and spill prevention measures is listed in Appendix K.

San Diego Bay and Area Charts:

#18772	Approaches to San Diego Bay
#18740	San Diego to Santa Rosa Island
#18773	San Diego Bay

NOAA Chart Information Site: <http://chartmaker.ncd.noaa.gov/>

II. HARBOR CONDITIONS

"Description of existing and expected conditions of weather, tidal ranges, tidal currents (directions and velocities) and other factors which might impair or restrict visibility or impact vessel navigation." (CCR 802(b)(3)(A)).

A. GENERAL WEATHER, TIDE, CURRENT, AND SEA CONDITIONS OF SAN DIEGO HARBOR

Weather

In the San Diego Bay area, visibility is reduced to less than 0.5 mile, mostly by radiation fog, on about 3-7 days per month from September through April. December is the foggiest month with the worst fog during the late night and early morning hours. Dense fog occurs frequently at North Island and Imperial Beach. Fog signal records indicate that, in general, it is foggier around the entrance of the Bay than it is in the North sections. For example, the fog signal at Point Loma in December is operating about 20% of the time compared to 10% at Ballast Point.

Winds in the area are strongest from November through April when they blow 17 knots or more about 2% of the time. Gales are rare. Wind gusts have reached 50 knots or more during the winter season. Strong winds often have a South component, but they also blow from West and East along the coast are often affected by local topography, particularly when the flow is off the land. For example, at Imperial Beach, East winds blow 15-20% of the time from November through March. During the late spring and summer, South through Northwest winds prevail at both locations. However, at the more exposed Imperial Beach, West winds occur up to 25% of the time whereas the flow is more variable at San Diego. By October, the wind regime begins to reestablish itself.

Prevailing wind during winter months is Northwest to North, force 4 (11-16 knots). Prevailing wind during the summer months is West to Northwest, force 4 (11-16 knots).

For more information contact:

National Weather Service:

(619) 289-1212

VHF Channel 2 (162.40 MHZ) or

www.wrh.noaa.gov/sandiego/marine.html

TIDES

San Diego Bay is free of excessive tidal ranges. The mean range of tide is 4.0 feet at San Diego, and the diurnal range of tide is up to 10 feet. A range of 10 feet may occur at the time of maximum tides. Daily predictions are given in the Tide Tables. Recently completed dredging of the Bay from the ten fathom curve at the channel entrance in to the aircraft carrier turning basin was originally perceived as a possible source of error in the predictions. However, the changes in channel depth do not appear to have substantially altered the tidal current scheme.

Tidal Current Tables can be obtained from local agencies or:

National Ocean Service, Distribution Branch

6501 Lafayette Avenue

Riverdale, MD 20737 Phone: (301) 436-6990

Currents

The currents set generally in the direction of the channels. In the vicinity of the entrance the usual velocity varies from 0.5 to an extreme of over three knots depending upon the stage of the tide and weather conditions. South of the end of Zuniga Jetty there is a slight set toward Zuniga shoal on the ebb tide. There is a crosscurrent deflected from Ballast Point—care should be taken while passing Ballast Point because a vessel may take a sudden sheer.

Eddies are usually encountered along the ends of the municipal piers making docking difficult. The velocity and direction of the eddies are irregular, and the greatest care must be exercised by even the most experienced vessel operator. Those unfamiliar with San Diego Bay should not attempt to dock large vessels without a pilot.

Calculated tidal currents of various berths within San Diego Harbor are:

- Naval Fuel Depot: up to 2.4 knots
- Naval Supply Center: up to 1.8 knots
- 10th Avenue Terminal: up to 2.1 knots
- 24th Street Terminal: up to 1.2 knots

SEA CONDITIONS

Approaches: The approaches to San Diego (from sea to buoys 5 and 6) and the main channel entrance (buoys 5 and 6 to buoys 9 and 10) are open roadsteads. Ground swells and seas can combine to a sea state reaching 15' with isolated reports of 20'. The recorded minimum sea state is 1.378', maximum sea state is 15.388' and mean sea state is 3.688'. Ground swells from the Southwest to West and largest ground swells from the West to Northwest can reach in as far as buoys 9 and 10. Extreme sea states from the Southwest can be felt as far in as the Naval Fuel Depot at La Playa.

Inner Harbor: All other inner harbor areas are not subject to ground swells. On rare occasions extreme weather from the southwest across the longer reaches of the South Bay can generate a sea state of 4' in an area from northern 32nd Street Naval Station to 10th Avenue Marine Terminal.

Wakes: Wakes from large and small vessels are encountered in all areas of the harbor. The greatest amount of wake activity is in the Ballast Point area and diminishing as one proceeds farther in the harbor down to the 24th Street Terminal.

B. DESCRIPTION OF HARBOR

"Description of current channel design (navigable channel width and advertised dredged depth) and any proposed changes to these plans." (CCR 802(b)(3)(D)).

The dimensions of San Diego Harbor are defined by the 1968 River and Harbor Act (House Document 365, 90th Congress, 2nd Session) and maintained by the U.S. Army Corps of Engineers, Los Angeles District. The channel depths are as follows:

- a. 55 feet from Buoy 4 to Buoys 9/10 for a width of 800 feet.
- b. 47 feet to the carrier turning basin for a width of 600-800 feet.
- c. 50 feet in the carrier turning basin.
- d. 40 feet in Central Bay first section for a width of 600-1900 feet from the turning basin to the Coronado Bridge.

- e. 35 feet in central Bay second section for a width of 600-1900 feet for the Coronado Bridge south along the face of the Naval Station piers.
- f. 35 feet in the south bay for a width of 600-1350 feet southward from the Central Bay channel.
- g. 20 feet in the Chula Vista Channel for a width of 200 feet southward from the South Bay Channel (maintained by the Port of San Diego).

Additionally, two adjacent anchorage areas are included in the harbor design. They occupy the area between Harbor Island and the North Bay Channel. The design depth of the western section is 26 feet and the design depth of the eastern section is 36 feet.

ACCURACY OF DEPTH INFORMATION

"Evaluate programs to determine accurate depth information in navigable channels, anchorages and berths used by tankers, and make recommendations necessary to increase the accuracy of such information." (CCR §802(b)(5)(C)).

DEPTH INFORMATION

The methods, procedures, and frequency that soundings are conducted within San Diego Bay and its approaches are considered adequate.

Channels and Anchorages

The U.S. Army Corps of Engineers determines the depth of navigable channels, anchorages and turning basins defined by the San Diego Harbor Project annually with "conditions surveys." Positioning of the survey vessel, conducted by either the range-azimuth or differential GPS method, is accurate to within five feet in the horizontal plane. Depths are measured by a 442 Innerspace fathometer, which can be read to the nearest 0.1 foot; however, accuracy is considered to be within one-half foot because of wave action.

Maintenance dredging is performed when necessary to restore depths to design specifications. Historically, little change in channel depths has been noted from survey to survey; maintenance dredging typically occurs about once every ten years. Based on the slow rate of silting within San Diego Harbor, the accuracy and frequency of "conditions surveys" are considered satisfactory.

Berths

As San Diego Bay does not have any major navigable tributaries, silting conditions alongside berths used by tankers are negligible. However, maintenance dredging in several locations is planned.

- a. U.S. Navy tanker berthing facilities consist of:
 - (1) The Defense Fuel Support Point at Point Loma, also known as the La Playa fuel pier, primarily served by Military Sealift Command transport oilers;
 - (2) The Navy Middle "Mike" pier Submarine Base, San Diego, serving the berthing needs of U.S.N.S. oilers: and,
 - (3) Various berths at Naval Station.

The U.S. Navy currently has an established program for regular, periodic soundings of depths alongside its berths. Soundings are conducted within a three (3) year cycle; no sounding is over three (3) years old.

b. Port of San Diego commercial vessel berthing facilities used by tanker vessels consist of:

(1) The berths at Tenth Avenue Marine Terminal. Berths 10-3 through 10-8 are maintained at 10.7-meter (35 feet) depths at MLLW and Berth 10-1 and berth 10-2 are maintained at a 9.1-meter (30 feet) depth. Berths 10-7 and 10-8 are maintained at 42 feet. These berths support tanker barges (requiring less than 20 foot depths) that serve the Port's bunker facility. Tanker-ship activity at Tenth Avenue Marine Terminal is very minimal, for example, 5 barges called at Port in 1991.

(2) Berths 24-2 and 24-3 at National City Marine Terminal. These berths are maintained at 10.7-meter (35 feet) depths at MLLW and support occasional tanker barge traffic, requiring less than 20-foot depths, serving South Bay Power Plant (last oil delivery was in 1993).

Berths at Port of San Diego facilities are sounded on a periodic basis with a Raytheon Depth Recorder, Model DE-719B, 7245A transducer and a hand-sounding line with a six-inch diameter bottom plate. The Port has resources to sound berths as needed. Soundings at Port facilities are generally accomplished prior to and after any construction, dredging, and facility improvement or maintenance projects.

SPECIAL CHANNEL CONDITIONS

San Diego Bay channel depths are a nominal 55 feet at the entrance and 35 feet to the Naval Station. At the entrance to the buoyed channel from the vicinity of Buoys 5 and 6 to the vicinity of Buoys 9 and 10 there can be swell action which may cause difficulties to inbound vessels.

Language regarding special channel conditions such as wrecks, recreational pleasure craft traffic, pilot boat, and the pilots association was added to the Coast Pilot.

SPECIAL NAVIGATION CONDITIONS

There is a single bridge spanning San Diego Bay. The San Diego/Coronado Bridge has 195 feet vertical clearance over the two middle channel openings with a horizontal clearance of 600 feet. The charts for the Bay show an in-bound lane between piers 18 and 19, and an out-bound lane between piers 19 and 20. It is accepted practice in San Diego Harbor to use the span between 19 and 20 for both directions of traffic, if the channel is clear.

"Description of procedures for routing vessel traffic, and any contingency or secondary routing plans that may be used during port construction and dredging operations." (CCR §802(b)(3)(B)).

The U.S. Coast Guard has the legal authority to restrict movement for special contingencies and has procedures for establishing security and safety zones. Alternate routing of vessels is determined on a case-by-case basis by the U.S. Coast Guard Captain of the Port. This is determined to be adequate by the Committee.

III. AIDS TO NAVIGATION AND NAVIGATIONAL HAZARDS

"Evaluate the existing aids to navigation systems available to each harbor as established by the United States Coast Guard or other navigational aids as permitted by the U.S. Army Corps of Engineers, and determine the need for any changes." (CCR §802(b)(5)(B)).

EVALUATION

The waters of San Diego Bay are charted on N.O.A.A. Charts #18675 and 18740. The charts include extensive depth soundings and depict locations of various wrecks and obstructions. The entrance to San Diego Bay is through a narrow buoyed channel roughly defined by Point Loma to the west and North Island to the east. The controlling depth is MLLW 47 feet from the entrance to the carrier basin and MLLW 36 feet thereafter. Aids to navigation are adequate.

San Diego Bay Approach Lighted Whistle Buoy "SD"

Arriving vessels generally steer on Buoy SD for their approach and then navigate a course, leaving the buoy on their port side to line up on the entrance channel. Departing vessels use Buoy SD as a mark for course changes and leave Buoy SD to starboard. This creates a potential close quarters crossing or meeting situation between arriving and departing vessels. Additionally, arriving ships navigating on southerly courses may experience a change in steering response after rounding Buoy SD because of prevailing sea swell conditions. This may delay the time it takes an arriving vessel to steady-up on its new course entering San Diego Bay and intensify a close quarters situation with vessels departing San Diego Bay.

Radio Beacons

During low visibility recreational and fishing boats often converge around buoys and wait for the weather to clear. A problem is created for larger vessels as standard radar cannot distinguish between marks which are buoys and those which are boats. Radio Beacons would alleviate this situation. Two RACONs are now operating on the San Diego/Coronado Bay Bridge and one on the San Diego Bay Approach Lighted Whistle Buoy "SD".

Channel Entrance Range Lights and Buoy Lights

For vessels with low bridge elevations, range and buoy lights are difficult to see at night because of the ambient light of the City of San Diego.

Zuniga Jetty

The five signs placed at different locations along Zuniga Jetty to mark its location are ambiguous. In low visibility, their similarity of appearance could lead to a misinterpretation of the location of a sign and a resultant inaccurate estimate by a vessel of its location in the main entrance channel. During certain tidal and low visibility conditions, vessels have inadvertently crossed and grounded on submerged sections of the jetty. The Harbor Safety Committee will continue to explore options to improving visibility for this navigational hazard.

ACTION SUMMARY ON AIDS TO NAVIGATION

The U.S. Coast Guard completed a San Diego Waterways Analysis and Management Survey (WAMS) and finalized their report and recommendations. All earlier recommendations made by the HSC regarding aids to navigation were addressed as part of this WAMS report. The WAMS Executive Summary is attached as Appendix M. The U.S.C.G. completes a Waterways Analysis and Management Survey every five years.

The Eleventh Coast Guard District publishes any temporary or permanent changes to Aids to Navigation in the weekly **LOCAL NOTICE TO MARINERS**. Use this Local Notice to Mariners to keep charts and Light Lists current. Important information which missed the weekly printing deadline is disseminated by a Broadcast Local Notice to Mariners on VHF Channel 22A.

To obtain the **LOCAL NOTICE TO MARINERS** contact:

Commander (POW)
Eleventh Coast Guard District
Bldg. 50-6
Alameda, CA 94501-5100
(510) 437-2976 Fax: (510) 437-5836

Internet Site: www.navcen.uscg.mil

**A source of 24-hour information is Navigation Information Service Watchstander at:
(707) 313-5900.**

Information on Private Aids to Navigation: (510) 437-2983.

**THE LIGHT LIST can be obtained from local agents, nautical bookstores, or:
Superintendent of Documents
U.S. Government Printing Office
Washington D.C. 20402**

***Mariners should report any discrepancies to the Coast Guard MSO.**

NAVIGATIONAL HAZARDS

Describe any fixed navigational hazards specific to the harbor and aids to navigation systems in place to minimize risk of contact with these hazards." (CCR §802(b)(5)(A)).

The list of possible fixed navigational hazards is listed below. The possible fixed hazards should be readily apparent to mariners when viewing current navigational charts in conjunction with reviews of Notices to Mariners and information contained within the United States Coast Pilot. A consolidated listing of existing publicly and privately maintained aids to navigation for San Diego Bay is published in U.S. Coast Guard Light List, Volume VI (Commandant, U.S. Coast Guard Publication P16502.6).

- Hazard:** Point Loma, West side of entrance, a ridged rocky peninsula
- Hazard:** San Diego Bay Channel Entrance, decreasing depths to shoreline. Aids to navigation are range markers at southern tip of Shelter Island shown in their 'as planned' position oriented to 353 T for the inbound approach. The actual position is offset from 'as planned.' Refer to Local Notice to Mariners and to U.S. Coast Pilot 7.
- Hazard:** Zuniga Jetty, East side of entrance, a 1.6 mile long low rocky sandspit
- Hazard:** Ballast Point, low and sandy, projects 0.4 mile NorthEast from the East side of Point Loma
- Hazard:** North Island, decreasing depth to shoreline
- Hazard:** Shelter Island, decreasing depth to shoreline
- Hazard:** Harbor Island, decreasing depth to shoreline
- Hazard:** Downtown San Diego Piers, decreasing depth to U.S. Bulkhead Line (shoreline).
- Hazard:** San Diego-Coronado Bay Bridge, 195 vertical feet over the two middle channel openings with a horizontal clearance of 600 feet
- Hazard:** South San Diego Bay, decreasing depth to shoreline and piers

NOTE: This is NOT to be used for navigation of a vessel and a mariner is directed to use appropriate references for current information such as the Coast Pilot, Charts, and Local Notice to Mariners, and the Light List.

IV. ANCHORAGES AND ANCHORAGE MANAGEMENT

Description of limitations of current anchorages (designations, proximity to heavily used fairways or channels) and any plans the harbor has to address those limitations." (CCR §802(b)(3)(C)).

Special Anchorages for U.S. Government Vessels

The administration of these special anchorages is exercised by the Commander, Navy Region Southwest, Port Operations. These are reserved exclusively for the anchorage of vessels of the United States Government and of authorized harbor pilot boats. No other vessel shall anchor in these areas except by special permission obtained in advance from the Commander, Navy Region Southwest, Port Operations.

1. The waters bounded by a line connecting the following points:

<i>Latitude</i>	<i>Longitude</i>
32° 42'13.2"N	117° 14'11.0"W
32° 41'12.0"N	117° 14'00.3"W

and thence along the shoreline to the point of beginning.

Area is located approximately 100 yards due west of the channel and west of a line extending approximately 351° 30' from Ballast Point Light. Depths vary between 34 and 67 feet.

2. The waters bounded by a line connecting the following points:

<i>Latitude</i>	<i>Longitude</i>
32° 43'25.6"N	117° 12'46.1"W
32° 43'25.3"N	117° 12'52.0"W
32° 43'08.2"N	117° 12'58.0"W
32° 42'57.9"N	117° 12'54.0"W

and thence easterly along the northern boundary of the channel to:

32° 43'05.0"N	117° 11'30.5"W
32° 43'27.2"N	117° 11'14.0"W

and thence along the shoreline of Harbor Island to the point of beginning.

This area encompasses anchorage berths Nos. 212, 213, 214, 215, 216, and 217 located due south of Harbor Island and printed on Chart No. 18773 (San Diego Bay).

"B" Street Merchant Vessel Anchorage

The waters bounded by a line connecting the following points:

<i>Latitude</i>	<i>Longitude</i>
32° 43'00.8"N	117° 10'36.3"W
32° 43'00.8"N	117° 11'23.0"W
32° 43'05.0"N	117° 11'30.5"W
32° 43'27.2"N	117° 11'14.0"W
32° 43'20.2"N	117° 10'53.0"W

and thence due east to the shoreline, and thence along the shoreline and pier to the point of beginning.

Area is located due west from the southwest corner of the "B" Street pier-head and abuts the special anchorage for U.S. Government vessels located off Harbor Island. A segment of the anchorage is within 100 yards of the channel boundary. Depths vary between 19 and 40 feet. Reserved for the use of merchant vessels calling at the Port of San Diego while awaiting a berth. The administration of this anchorage is exercised by the Port Director, San Diego Unified Port District.

Contact Phone Number: Port of San Diego, Marine Operations (619) 686-6345

Anchorage for General Use

Anchorage for general use include all navigable waters of the harbor except: cable and pipeline areas, Special Anchorages, Naval Security Zones, Naval Restricted Areas, the U.S. Coast Guard Safety Zone, Unified Port District Regulated Areas, South San Diego Bay (southward of a line drawn between the mouth of Sweetwater Channel and a point on Silver Strand just northerly of Coronado Cays Crown Isle), and Designated Channels.

Additionally, anchoring in Central San Diego Bay (lying northerly of South San Diego Bay and southerly of a line drawn westerly from the South Embarcadero Marina Park fishing pier to the easterly most point of North Island Naval Station in Latitude 32° 42'10"N) is prohibited except in Special Federal Anchorage A-5 and San Diego Unified Port District designated anchorages. Authorization to anchor in Central San Diego Bay outside designated anchorage areas for limited periods of not more than 72 hours may be obtained by application to the San Diego Unified Port District. Vessels anchoring in the portions of the harbor other than the areas excepted above, shall leave a free passage for other craft and shall not obstruct the approaches to wharves in the harbor.

Contact Phone Number: Port of San Diego, Marine Operations (619) 686-6345

Small Craft Mooring and Anchorage Areas

Comprised of areas established for longer term anchoring and mooring of noncommercial, recreational vessels. The general locations of these small craft anchorages are away from main ship channel areas and are identified below.

Contact San Diego Harbor Police: (619) 686-6570 or (619) 686-6272
www.sdhp.com

Anchorage Designation	Location
A-1	La Playa Cove, Shelter Island Yacht Basin
A-1a, A-1b, A-1c	Shelter Island Roadstead, bayward of Shelter Island
A-2	Shelter Island Commercial Basin
A-3	Laurel Street Roadstead, due east of the Coast Guard Air Station
A-4	Bay Bridge Roadstead, northeast of western terminus of the San Diego Coronado Bay Bridge
A-5	Glorietta Bay
A-6	Naval Amphibious Base
A-7	The California Department of Parks and Recreation has not pursued development of an anchorage at A-7 and it appears it may not be done. Boaters may, however, anchor parallel to the beach between Fiddler's Cove and Crown Cove. Anchorage in this area is limited to 72 hours a month and requires a permit from the Harbor Police.
A-8	Sweetwater Anchorage, west of 24th Street Marine Terminal, defined by lighted Buoys A,B,C and D and Buoys E and F.
A-9	The A-9 anchorage, southwest of the Coast Guard station, has been approved by the Coastal Commission and adopted in the Port Master Plan. Boundary buoys will be installed in the area upon completion of the remediation project currently in progress in A-9. A-9 is bounded by the following:

<i>Latitude</i>	<i>Longitude</i>
32° 43'35.9"N	117° 10'02.2"W
32° 43'31.5"N	117° 11'13.2"W
32° 43'26.9"N	117° 11'11.0"W
32° 43'25.9"N	117° 11'07.7"W
32° 43'34.8"N	117° 10'03.2"W

ANCHORAGE LIMITATIONS

Anchoring depths and anchor swing radii vary between each of the possible anchorage areas within San Diego Bay.

GENERAL PROCEDURES

Berthing for commercial vessels generally is available without delay at the Port of San Diego. When anchoring of a commercial vessel is required inside the harbor, pilots generally assist these vessels to a suitable anchorage.

"Vessel mooring requirements." (CCR §802(b)(12)(A)3.).

Mooring is allowed only in designated areas. It was of concern to the Committee that anchor lights are not required by certain length vessels in special anchorage and certain other areas as specified in Rule 30, "Inland Navigation Rules".

LIMITATIONS

"Proximity to heavily used fairways or channels and any plans the harbor has to address those limitations." (CCR §802(b)(3)(C)).

There have been no reported vessel groundings or other incidents of a negative nature in the established anchorage areas. All vessels requiring anchorage have been provided a safe anchorage. While no specific accidents have been caused, two significant concerns were raised regarding a potential conflict. A problem relating to the use of the area west of the channel between a line extending through channel Buoys 17 and 19 toward Shelter Island by various recreational vessels for general anchoring was noted. Such use of this area in close proximity to the channel significantly hinders its potential use by large vessels that may, on occasion, have need to depart from the channel to provide adequate separation between other large vessels as they maneuver to negotiate the turn in the channel between Buoys 16, 16a, and 17. Also, the area surrounding the turning basin at the 24th Street Marine Terminal has numerous wrecks and obstacles that may impair tug escort ability to maneuver.

San Diego Unified Port District Code Section 4.40, North San Diego Bay Anchoring prohibits unauthorized anchorages in North San Diego Bay. Since enactment of this code, all vessel in the area west of the channel and between Buoys 17 and 19 have relocated from this area. The Harbor Police closely monitor this area for vessels that are illegally anchored.

V. COMMUNICATIONS

"Review and evaluate the adequacy of current ship-to-ship and ship-to-shore communication systems used in the harbor area. Identify any low propagation, or silent areas within the harbor area. If communication deficiencies exist, develop a strategy to address such deficiencies." (CCR §802(b)(6)(A),(B), & (C)).

RADIO COMMUNICATIONS

Ship-to-ship and ship-to-shore communications within the waters of and approaches to San Diego Bay are conducted almost exclusively on VHF marine radio frequencies in the 156-162 Mhz band. The level of usage is variable with intermittent time spans of congestion on certain frequencies during periods of high vessel activity among recreational boaters, fishermen, military vessels, and commercial vessels. With the exception of the landmass of Point Loma, extending to heights in excess of 400 feet and bordering the west side of San Diego Bay, the topography surrounding the Bay is low-lying and conducive to the line-of-sight propagation of VHF radio communications.

As there is no vessel traffic control system in San Diego Bay, vessels may enter, depart, or move within the Bay without any prior radio coordination or advance communication of their intentions. San Diego Marine Information System (SDMIS) is available at <http://www.sdmis.com> providing an interactive chart, a view of San Diego Bay, maritime information, winds, currents, tides, vessel schedules and site map. However, U.S. Naval Station San Diego, call sign "Control 1," maintains a listening watch 0600-2200 on VHF Channel 12 and has information on most U.S. Navy, U.S. Naval Service, and Military Sealift Command vessel arrivals, departures, and intra-harbor movements. The Port's pilots normally advise "Control 1" of their in-progress piloting activities on board commercial vessels and receive current naval vessel movement information from "Control 1." The pilots then coordinate directly with other vessel traffic via VHF radio to discuss navigational matters.

The U.S. Navy's "Control 1" in the meantime continues to provide vessel traffic information to commercial vessels. The U.S. Navy's "Control 1" has relocated to 32nd Street Naval Station, San Diego.

Vessels moving in San Diego Bay can expect to encounter U.S. Navy vessels during their transit. The U.S. Navy vessels make extensive use of VHF Channel 12 for ship-to-ship communications, in addition to monitoring Channels 13 and 16. For security reasons, U.S. Navy submarine movements within the main entrance channel between points outside the Bay to the submarine base near Ballast Point may occur under radio silence or with abbreviated radio communications with other vessels operating in their vicinity. The U.S. Navy submarines make use of Channel 14 to communicate with assisting tugboats, pilots, and shore units.

The U.S. Coast Guard San Diego Group Operations Office and San Diego Unified Port District Harbor Police maintain a 24-hour per day listening watch on VHF Channel 16. The services of Port pilots are normally arranged in advance of ship arrivals by ship's agents, however, requests for a pilot can be relayed to the pilots by calling the San Diego Harbor Police on VHF Channel 16.

Cellular Phones

A growing use of cellular telephone services to support ship-to-shore communications has been noted. In the area of the entrance channel to San Diego Bay and seaward, there appears to be an overlapping of Mexican and U.S. cellular systems. Interference and inability to make calls from cellular phones in this area has been observed. The communications systems used in the harbor area are considered to be adequate.

CURRENT USAGE, VHF MARINE RADIO CHANNELS

The following table outlines the authorized and prevailing usage of VHF Marine Radio Channels within San Diego Bay and identifies the channels normally monitored by certain radio equipped vessels/users that frequent San Diego Bay.

CHANNEL	AUTHORIZED USE	CUSTOMARY USERS
16	Distress, Safety, and Calling	All VHF-Equipped Vessels
09	Calling	Commercial and Non-Commercial Vessels
06	Intership Safety	
12	Port Operations	High usage by U.S. Navy for ship-to-ship and ship-to-shore communication USN's "Control 1."
13	Navigational, Bridge-to-Bridge	
22	Coast Guard Liaison	
77,67	Port Operations	Pilots/Tugboats
19a	Commercial	Foss Maritime (Pactow Tugboats)
80	International	Sportfishing Boats
73,80	Port Operations, Commercial	Harbor Excursion Vessels
14	Commercial, Port Ops	U.S. Navy Submarines
10	Commercial	Harbor Tug and Barge R.E. Staite Eng.
73	Port Operations	USN Fleet Training Group Vessels
11	Commercial	Westcoast Tug & Barge
7a	Commercial	NASSCO
68, 69, 71, 78	Non-commercial (Ship-to-Ship or Ship-to-Shore)	Working Channels for Recreational Vessels
28, 86	Public Correspondence	San Diego Marine Radio Telephone Operator

RADIO COVERAGE

Present coverage of the San Diego Bay area by VHF Marine Radio is considered adequate. There are no radio communication silent areas or blind spots within the harbor area.

COMMUNICATIONS PROBLEMS

1. Interference

a. Improper and unauthorized use of the VHF Marine Radio channels by certain users has created sporadic interference for authorized users. As an example, transmissions from non-English speaking users have interrupted pilots working with tugs on VHF Channel 77 and 12. Because of language barriers, persons causing interference often cannot readily be advised to stop improper use of a radio channel.

b. The improper use of VHF Channel 13, the designated channel for the Vessel Bridge-to-Bridge Radiotelephone Act, to transmit other than navigational-related information has been reported. This channel is designated for the exchange of navigational information to facilitate safe passage between certain size and type of vessels. Operators on these vessels are required to maintain a listening watch on Channel 13 and, when necessary, transmit and confirm the intentions of their vessel and any other information necessary for the safe navigation of vessels.

c. Interference from radio transmissions that carry over from other ports, including Los Angeles/Long Beach, has been reported. This might be caused by vessels transmitting with their radios set on high power settings.

2. Slow Response or Non-Response to Call-Ups

Commercial vessels in San Diego Bay may, on occasion, experience slow response from military vessels when they call-up military vessels on VHF Channel 13 or 16. U.S. Navy submarines may not acknowledge call-ups. VHF Channel 12 is used as a primary channel for ship-to-ship communication between Navy ships and shore units.

3. Confusion Caused by Military Parlance

Military vessel operators use standard H.O. 102 parlance when communicating with commercial vessels. As an example, a military vessel operator may inquire of a commercial vessel "Interrogative your intentions" in lieu of stating, "What are your intentions?" If there is any doubt as to the meaning of a communication, it is necessary to ask for clarification.

The U.S. Navy's "Control 1" in the meantime continues to provide vessel traffic information to commercial vessels. The U.S. Navy's "Control 1" has relocated to 32nd Street Naval Station, San Diego. "Control 1" no longer has a view of vessel traffic within the Bay.

VI. VESSEL TRAFFIC PATTERNS

EVALUATION

The San Diego shipping channel consists of a main channel with no branches or stems in its entire length to 24th Street Terminal. There are approximately 9,000 deep draft vessel transits of the Bay per year. There is one major choke point at Ballast Point near the entrance. This is the narrowest point in the channel and just inside is the U.S. Naval Submarine Base. It should be noted that submarines can be getting underway or maneuvering to berth at all hours of the day. In poor visibility conditions submarines can often paint on radar as a small contact due to their inherent construction characteristics of a small conning tower above water with approximately 90% of the remainder of the vessel submerged.

Bayward of the U.S. Submarine Base, on the port hand, is the Naval Fuel Pier where contract tankers and, occasionally, naval combatants load and discharge fuel. To starboard in this same stretch is a naval ammunition pier on North Island. At the end of Shelter Island near the entrance range-markers is the outlet from the Shelter Island Yacht Harbor. A large measure of the small craft traffic will be found in this vicinity, particularly on weekends. At the other end of Shelter Island is the entrance to Commercial Basin where the majority of sportfishing and headboat traffic is berthed.

After an eastward leg, the channel enters a turning basin area before heading toward the center spans of the San Diego/Coronado Bridge. Bordering on this turning basin are the Embarcadero with its Cruise Ship Terminal and adjacent to the Naval Supply pier. Across the channel and turning basin area are the Naval aircraft carrier berths on Naval Air Station, North Island

The next channel leg toward the Coronado Bridge has the city's 10th Avenue Marine Terminal on the port hand. Between this section and on through the bridge, commercial shipyards give way to the U. S. Naval Station; all of these activities on the port hand. The channel then narrows, then proceeds to the National City Marine Terminal.

It should be noted that the San Diego/Coronado Bridge has a vertical clearance of 195 feet over the two middle channel openings with a horizontal clearance of 600 feet. The charts for the Bay show an in-bound lane between piers 18 and 19, and an out-bound lane between piers 19 and 20. It is accepted practice in San Diego Harbor to use the span between 19 and 20 for both directions of traffic, if the channel is clear.

Commercial Vessels

On average, there are two to three large commercial vessels (bulk freighters, break-bulk freighters, roll on/roll off (RO-RO) automobile carrier vessels, or cruise ships) in the port at any one time. RO-RO's call on the port's National City Marine Terminal at a frequency of three vessels per week. Various bulk and break-bulk freighters call at the port's Tenth Avenue Marine Terminal (TAMT), also at a frequency of three vessels per week. Barges transporting sand and aggregate materials operate on a daily basis between TAMT and the Port of Ensenada, Baja California. A number of locally-based work barges also transit the waterway in support of a variety of maritime-industrial business activities. Cruise ships make regular calls at the Port's B Street Pier Cruise Ship Terminal. In the fiscal year ending June 30, 2000, 99 cruise ships called at the Port, including a scheduled weekly liner.

A commercial fishing fleet, consisting mainly of sportfishing vessels, operates out of the America's Cup Harbor Basin at Shelter Island and the port's commercial fishing berthing facility at the G Street Mole. The Port of San Diego's commercial vessel traffic has continued to grow as the Port continues to develop its marine terminal facilities. In fiscal year 1999/2000, the Port reported a 50% increase in shipping over its previous fiscal

year and an all-time record annual tonnage of 2,435,902 metric tons of cargo handled through the Port. A total of 615 voyages by commercial vessels, representing 1230 transits in and out of San Diego Bay, occurred in fiscal year 1999/2000. The Port of San Diego has completed a Maritime Master Plan and is undertaking several facility development projects that will provide facilities for future business with container lines.

Military Vessels

Military vessels make up the bulk of large vessel traffic in San Diego harbor and frequently transit the waterway enroute to berths at the 32nd Street Naval Station, the Naval Pier (south of Broadway Street pier), the North Island Naval Air Station, the submarine base at Ballast Point, and Amphibious Base Coronado in Glorietta Bay. Naval vessels of all classes, from 50' long amphibious landing craft to 1115' long aircraft carriers, can be found in the harbor. Landing craft and smaller vessel usually moor at the amphibious base in Glorietta Bay. Aircraft carriers moor at piers along the air station, while the bulk of the fleet moors at the 32nd Street Naval Station. U.S. Naval Service vessels moor downtown at the Naval Pier adjacent to the U.S. Naval Supply Center.

There are three Coast Guard 110' patrol boats and two 178' patrol vessels stationed at Point Loma. The Coast Guard station northeast of Harbor Island has two 41' utility boats. Various classes of cutters frequent San Diego for training purposes and usually moor at the Naval Pier downtown or at the 32nd Street Naval Station.

The U.S. Navy houses their Afloat Training Group at the 32nd Street Naval Station. ATG trains and tests all U.S. Military ships larger than 110' feet in length. These tests are administered through a program called Tailored Ship Training Availability. TSTA is conducted while the vessel is underway, at anchor and moored. The testing vessels normally anchor south of Harbor Island. Underway drills are conducted outside of San Diego Bay. Drills and training that can be conducted pier-side are conducted at either the 32nd Street Naval Station or at North Island Naval Air Station.

LIMITED ACCESS AREAS

Recreational boaters need to be aware of the following limited access areas, in San Diego Bay. All of these areas are noted on Chart 18773 and should be referenced per the appropriate references, including U.S. Coast Pilot 7.

Security Zones are in place at Naval Station San Diego, Naval Sub Base, Naval Carrier Basin, and other noted areas on North Island as per chart 18773. No persons or vessels may enter these Security Zones. Additionally, nothing may be placed or taken from these areas.

Restricted Areas are in place at the Coronado Amphibious Base, Pt. Loma Bait Barge, and Ballast Point, as per chart 18773. Access to Restricted areas is limited to non-stop passage for the security of government property and/or to provide protection to the public from risks of damage.

A Safety Zone is in place at the U.S. Coast Guard base, as per chart 18773. Vessels may transit the area of this safety zone without permission, but may not anchor, stop, remain within the zone, or approach within 100 yards (92 meters) of the land area of Coast Guard Activities San Diego or structures attached thereto. Note that Temporary Safety Zones can be established for marine events and other on-water operations for safety and environmental purposes. No person may enter a safety zone unless authorized by the Captain of the Port. These specific zones will be published in the Local Notice to Mariners (and/or broadcast on VHF-FM Ch. 16).

A Regulated Navigation Area (RNA) is in place at the ARCO terminal dry-dock at U.S. Naval Sub Base Pt. Loma. During submarine docking/undocking operations, mariners transiting within the RNA shall proceed at a speed that generates no wake from their vessel. A Broadcast Notice to Mariners will be issued to inform the maritime community of the dates and times of the docking/undocking operations.

Recreational Boating

Recreational boaters for the San Diego/Mission Bay area have been placed at 200,000. Mission Bay is used exclusively by recreational boaters. Marinas inside San Diego harbor are located at Shelter Island, Harbor Island, Marriott Hotel, Chula Vista Harbor, Coronado Cays, and Glorietta Bay.

Considering the vicinity of the marinas to the main shipping channel, recreational boaters present a hazard to navigation to larger commercial traffic restricted in their maneuverability. There have been numerous complaints from both the Navy and the San Diego Pilots about Inland Navigational Rule 9 violations in which recreational boaters impede the safe passage of larger vessels confined to a narrow channel. The following table is a sample representation of annual commercial and military vessel traffic for the Port of San Diego.

<u>VESSEL TYPE</u>	<u>DIMENSIONS</u>			<u>VESSEL MOVEMENTS</u>
	Length	Beam	Draft	
Cargo (largest vessel) vessel type: Bulk Container Vessels General Cargo Roll On/Roll Off	1,000'	106'	41'	433
Cruise Ship (largest vessel)	1,000'	106'	34'	130
Excursion (largest)	151'	42'	8.5'	60,572
Commercial Sportfishing	123'	32'	13.0	10,094
Military (largest vessel)	1,115'	(flight deck) 252'	39'	<u>10,000</u>
Total Annual Movements:				81,229

Note: Tug traffic was not included in the above statistics since inner harbor tug movements alone exceed 7,000 for a typical year.

Note: Excluding cruise ships, approximately 1.6 million passengers were carried aboard Excursion and Sportfishing vessels in 1999. Additional information regarding Vessel log reports, a summary of U.S. Navy ship movements, Port District tonnage reports, and data compiled regarding oil transport in the harbor are attached as Appendices D, E, and F.

SMALL VESSEL TRAFFIC EFFECTS ON SAFETY

"Assessment of current safety problems (small vessels, sailing vessels, or vessels engaging in fishing as is relates to violation of Rule 9 (Narrow Channels Rule) of the Inland Navigational Rules Act (33 USC 2009)." (CCR §802(b)(4)(C)).
"Assessment of the need for establishing or upgrading the existing educational or public awareness programs for the waterway users." (CCR §802(b)(4)(F)).

As host of the 1992 and 1995 America's Cup Yacht race, San Diego Bay established itself as a sailing and yachting center in California. The presence of a large kelp bed and excellent ocean fishing supports a large fleet of dive, whale watching, bottom and surf fishing vessels in San Diego Bay. These vessels use the same navigation channel as the larger vessels when entering and exiting the Bay. In addition to ocean going small vessel traffic, there is significant traffic within the Bay. The vast majority of small vessel recreational traffic is encountered on the weekends in San Diego Bay. During the summer months, on Wednesday evenings, there is a large (and largely informal) gathering of sailboats for a race known locally as the "Beer Can Regatta". This race can virtually cover the entrance area with sailboats from about 1700-2000 local time.

Existing conflicts and potential problems associated with the interface between small recreational and fishing vessels, and larger commercial and military vessels were discussed at length by the Committee. Although there is ongoing communication between recreational boaters and commercial/Navy interests in the Bay, the Committee recognized the need for continuing efforts to expand and improve this dialogue and to enhance this relationship in order to ensure the safety of both small boats and shipping. In this light, the Harbor Safety Committee has explored, in depth, with representatives of recreational boaters, commercial interests, San Diego Bay Pilots, U.S. Coast Guard, and the U.S. Navy, means to address these areas of conflict. The Committee found the following to be primary sources of existing difficulty during navigation in the Bay.

SMALL VESSEL TRAFFIC HAZARDS

1. **Failure of recreational boaters to recognize the limitations of the large vessels regarding maneuverability and depth restrictions that confine their safe navigation to the main ship channel.**
2. Failure of some recreational boaters to know or **respect the Rules of the Road and Rule 9** (Steering and Sailing Rules-Narrow Channels).
3. Some members of the boating public operating boats in an unsafe manner.
4. Sailboats (racing and otherwise) interfering in the passage of larger vessels and unwittingly getting into the wind shadow of the larger vessel which causes the sailboats to lose maneuverability.
5. Races (with or without permits) with courses that cross the navigation channel during use by a larger vessel.
6. Recreational fishermen fishing in the channel and near the channel markers.
7. Failure of some recreational boaters to monitor and use proper channel for radio communication. It's each boater's responsibility to use proper radio practices, protocol, and language.

BOATER EDUCATION

The Chair of the HSC appointed an Education Subcommittee to evaluate and implement the following recommendations concerning the need for establishing and/or upgrading existing educational or public awareness programs for all waterway users. A focus of the Committee's efforts has been on the interaction of small vessels and ships. See Appendix C.

ACCIDENTS/NEAR ACCIDENTS

"History and types of all accidents and near-accidents which have occurred in the Harbor in the past three years and any corrective actions or programs taken to alleviate recurrences. For purposes of this subsection, "near-accident" shall mean all situations where a risk of collision as defined by 33 USC 2007 existed." (CCR §802(b)(4)(B)).

Accidents:

The most recent condensed USCG accident reports for three years is attached as Appendix K. Anecdotal evidence supports that there have been many close calls.

There are strict reporting requirements for casualties and potential casualties already in place (46CFR4.03 and 4.04). Any violations of the Inland-International Navigation Rules that result in a near collision, grounding, or other hazard to the Port must be reported to the Coast Guard Marine Safety Office for investigation, potential penalty and the capturing of lessons learned.

Near Accidents:

There are no clear guidelines for reporting near accidents if they do not result from violations of the Rules of the Road. That they do occur is, of course, a given. Tabulations of types of traffic, cargo, oil spill totals and unofficial narratives of near-accidents appear in Appendix D, E, H, and I.

Representatives of the five Harbor Safety Committees and the U.S. Coast Guard met in an attempt to reach agreement on a uniform definition of "near miss" incidents. All five Harbor Safety Committees (San Diego, Los Angeles/Long Beach, Port Hueneme, San Francisco, and Humboldt) have now agreed to the following definition:

A reportable 'Near Miss' is an incident in which a pilot, master or other person in charge of navigating a vessel, successfully takes action of a 'non-routine nature' to avoid collision with another vessel, structure, or aid to navigation, or grounding of the vessel, or damage to the environment.

The next step is to identify, collect and correlate statistical data on near misses in a consistent manner within California, and to encourage the timely reporting of such incidents so that, by analysis, improvement to the safe management of vessel movements in the State's waterways may be recommended and implemented.

The Committee fully supports and will continue to participate in the joint state-wide endeavor of all five Harbor Safety Committees and the U.S. Coast Guard to develop a standardized system for reporting and recording data on "near misses."

Cargo Vessels

"Description of the types of vessels which call on the ports or facilities within the harbor area, and identification of the types of cargo transported on the vessels, and a determination of the amount of oil annually (use 3-year average) shipped into or from the ports or facilities within the harbor." (CCR §802(b)(4)(A)).

Several types of cargo frequent the Port of San Diego. Cargo include: lumber, newsprint, fertilizer, fresh, frozen, and canned foodstuffs, automobiles, palm oil, minerals, and fuel oil. The most common large vessels in the harbor are cruise/passenger ships and naval vessels. The specific reports on Port of San Diego Tonnage and Vessel Arrivals by Classification since fiscal year 1999/2000 can be found in the Appendix E.

The oil and fuel that move through the Bay are primarily a result of naval operations where oil and fuel may transit the harbor several times per week for naval operations. U.S. Navy ship, Foreign ship, service craft, and tug movements are summarized in Appendix F, Navy Fuel Depot Totals in Appendix G.

"Current procedures for routing vessels during emergencies or other contingencies which impact navigation." (CCR §802(b)(4)(D)).

The U.S. Coast Guard has the legal authority to restrict movement for special contingency and has procedures for security and safety zones. Alternate routing of vessels is determined on a case-by-case basis by the Captain of the Port. This is determined to be adequate by the Committee.

"Review of existing and proposed federal, state, and local laws, regulations or ordinances affecting the harbor area to determine a need for any change." (CCR §802(b)(4)(E)).

During their deliberations the HSC reviewed the various jurisdictional issues and laws governing vessel movement in the Harbor. Current recommendations are listed in Chapter XIII regarding the support by the HSC to change various federal, state, and local laws. Most of these recommendations apply to navigation on the federal and state level, and mooring ordinances on the local level.

A compendium of California statutes relating to oil spill prevention and response is available from the California Department of Fish and Game Office of Oil Spill Prevention and Response Legal Unit. A copy is available for public review at San Diego BayKeeper 1450 Harbor Island Drive, Suite 205, San Diego, CA 92101.

VII. TUG ASSIST/ESCORT

The San Diego Harbor Safety Committee adopted Draft Tug Escort Regulations. They are contained in the archives and are available by contacting San Diego BayKeeper or OSPR.

Recommendation 16-A: As a result of the 1997 review of the Harbor Safety Plan the Committee made the following recommendation for a change to the Draft Tug Escort Regulations: Modify section 852.4 (i) (2) to read *A tanker shall not be required to engage in escort services when it is carrying less than 5% of the vessel's deadweight tonnage in oil or petroleum products, and is in ballast and inert or gas-free.*

EVALUATION

The area with a need for tug escort for petroleum product transportation embraces over 12.8 nautical miles of navigable waters and reaches from the San Diego Entrance Buoy to National City Marine Terminal. Considerations of the ecology, shoreline developments, industries, economics, present technology, available equipment, local operations, and weather and sea conditions are among the matters considered. Development of a practical, effective and economic plan to increase the transit safety and spill prevention of petroleum products upon the waters and coast line of the San Diego Harbor area requires a comprehensive analysis of all the above parameters.

The present commercial procedure for inbound tank vessels is for the assisting tug(s) to meet the vessel at Buoys 5/6 or as otherwise directed. Tugs assisting outbound tank vessels are generally released after the ship has cleared Buoys 5/6 and is headed fair.

When and how the tug(s) are made fast to both inbound and outbound vessels and when tugs are released are factors determined by the Pilot and/or Master. These decisions depend on terminal location, vessel size, other vessel traffic, weather, currents and other varying factors. Tank vessels proceeding to or departing from the B Street anchorage are generally not assisted by tug(s).

The majority of petroleum products transported in San Diego Harbor are JP-5 and DFM. The main import destination is the Naval Fuel Depot, La Playa. These oils are then transferred to various military vessels as cargo and/or service oil. These vessels operate in and out of the harbor on regular local training exercises and other operations.

TUG EQUIPMENT

A minimum of four commercial ship assist tugs assigned to San Diego Harbor are of the conventional twin screw design, owned and operated by Foss Maritime. The available hp/bollard pull is from 2,000 hp (27 t bp) to 2400 hp (28 t bp), with an average of 2,062 hp (25.5 t bp). The fleet has an average age of 20.5 years and average length of 80.5'. All of these tugs are equipped with an operable tow winch fitted with wire(s) and all tugs are fendered for ship assist.

These tugs perform both ocean and harbor services and are occasionally rotated between other ports. Some of the physical designs preclude their use in extreme flair and counter situations and in tight quarters.

Ten additional tugs are operated by Harbor Tug and Barge Co., West Coast Marine, and Crowley. Their available hp/bollard pull is from 400 hp to 3,500 hp. They have an average of 1285 hp. The fleet has an

average age of 15 years, and average length of 51.9'. They are used in barge moves/assists, general harbor towing, dead ship assists, and smaller ship assists.

Five 2400 hp tractor tugs and one 4400 hp tractor tug are berthed at the National Station San Diego. These tugs are dedicated to naval operations except in emergency situations. All are fendered for ship and submarine assist. Refer to the Tug Escort Inventory on page 34 for a detailed description of the tugs in the San Diego Harbor.

It is the opinion of this committee that the tugs available in San Diego Harbor provide a sufficient selection of sizes, shapes and power so that, including all the committee recommendations, any tanker now using the port can be safely handled.

STEERING AND STOPPING EFFECTIVENESS OF TUGS

A tug's effectiveness in steering and controlling an assisted vessel is affected by a number of variables. Factors such as, but not limited to, the ship's size, tonnage, draft, handling characteristics and speed, conditions of currents, available water, wind, width of berth, and the tug's maneuverability, rudder power, push/pull capabilities are among the variables. While some conditions render steering effectiveness as marginal, the Pilots have demonstrated the ability to handle virtually all conditions.

The majority of escort tasks will be of relatively short durations, projecting that the escort tug(s) will also serve as the assist tug(s). Both calculated stopping power needs and local knowledge on assist effectiveness of existing equipment are major considerations in recommending the number and total power of escort tugs.

Traditionally the push/pull capability of tugs has been measured by the engine manufacturers indicated horsepower. A more accurate assessment is by "bollard pull" testing. Such testing is conducted by connecting a tug to a shore side dynamic measuring device and applying full tug's power in both the ahead and astern modes. The tugs push/pull capability is indicated by the measuring device in a designated measurement standard.

TUG MANNING

The current manning level practices in San Diego for tugs of 400 hp and over are from 2 to 9 personnel, consisting of at least one operator and the rest in the deck and/or engine departments. The specific number is dependent on tug size, power, deck equipment, job function, and contractual requirements or other policies. All personnel meet or exceed federal licensing or certification requirements.

The Committee finds that the current manning levels for harbor operations are sufficient to perform the necessary work involved with escort services. In any event, no tug should engage in escort services with less than a crew of two.

EVALUATION REPORTS

Following OSPR acceptance of the PLAN, the members of HSC Tug Escort Subcommittee will meet annually for the purpose of reviewing the effectiveness of the Tug Escort recommendations. Items of review shall include, but not be limited to, accident reports and near accidents, oil spills, tug inventory update, bollard pull testing data, introduction of advanced technology or equipment, and input from Pilots, tug Masters, representatives from towing industries, builders and other interested parties. Tug escort regulations are contained in the archives. The HSC shall generate a written report including the effectiveness and/or any known problems of the current plan, any concerns not addressed, and any new proposals or modifications.

2002 ESCORT TUG INVENTORY-SAN DIEGO HARBOR

Tug		Adv. Hp:	Bollard Pull	Year Built	Length	Beam	Draft	GT	Tow Wire	Fendered
CERTIFIED										
FOSS MARITIME COMPANY										
Pacific Knight	*tf	2000	26.1	1980	76	26.5	11.5	106	1	yes
Pacific Queen	*tf	2000	24.6	1980	76	26.5	11.5	106	1	yes
Pacific King	*tf	2000	26.1	1980	76	26.5	11.5	94	1	yes
Pacific Viking	t	2400	23.1	1978	96	26	13	94	2	yes
***Cabrillo Foss	t	680	8	1951	42.3	14	5.3	25	1	yes
***On contract to U.S.Navy Port Ops.										
CROWLEY MARINE SERVICES										
Saturn	t	3500	31.4	1969	91	29	13.3	147	1	yes
Spartan	t	3500	34	1969	91	29	13.3	147	1	yes
NOT CERTIFIED										
WESTCOAST TUG & BARGE										
Harbor Admiral	tf	1000	<u>11</u>	2001	42	21	6	n/a	0	yes
Harbor Captain	*tf	1000	<u>13</u>	1990	40	20	7	n/a	0	yes
Harbor Commander	tf	1000	<u>11</u>	1988	36	16	7	n/a	0	yes
Harbor Mate	tf	600	<u>7</u>	1997	32	14	5.5	n/a	0	yes
Harbor Cadet	tf	600	<u>7</u>	1980	26	14	5.5	n/a	0	yes
Westcoast Contender	tf	700	<u>9</u>	1955	50	14	6	n/a	2	yes
Westcoast Responder	tf	450	<u>4</u>	2001	50	14	4.5	n/a	0	yes
George H	sf	500	<u>6</u>	1981	39	12	7	n/a	0	yes
HARBOR TUG & BARGE										
Feather River	*tf	1250	n/a	n/a	64.1	26.1	12	136	0	yes
Metola A	t	1100	<u>10</u>	n/a	66.5	15.6	8	48	0	yes
EDISON CHOUEST OFFSHORE										
C-Tractor-7	zt	2400	34	1994	90	34	18	147	0	yes
C-Tractor-8	zt	2400	34	1994	90	34	18	147	0	yes
C-Tractor-9	zt	2400	34	1994	90	34	18	147	0	yes
C-Tractor-10	zt	2400	34	1994	90	34	18	147	0	yes
C-Tractor-11	zt	2400	34	1994	90	34	18	147	0	yes
C-Tractor-14	zt	4400	<u>62.5</u>	1999	102	38	18	198	0	yes

LEGEND

*:kort nozzled

f:flanking rudders

t:twin screw

double underline:estimate

s:single screw

zt:azimuthing propellers, tractor(propellers forward)

z:azimuthing propellers(z-drive)

***Note:all public/contracted tugs are fendered for U.S.Navy submarine assist.

VIII. VESSEL TRAFFIC SERVICE (VTS)

"Provide recommendations based on the specific needs unique to the harbor, regarding the establishment or expansion of VTS systems for the harbor area." (CCR §802(b)(9)(A)).

San Diego Bay does not have a Vessel Traffic Service, but does have a system of communication between the U.S. Navy and the Pilots of the San Diego Bay Pilots Association whereby each commercial pilot has an individual cell phone and can be called directly from the Navy "Control One" to coordinate vessel moves. Vessel movements are announced on marine VHF Channel 12 as occurring by the entity making the move to "Control One" who acts as a clearing house for the information. This arrangement has been adequate. However, with expected increase in traffic, it is advisable that a more sophisticated system be instituted. While the current system of communications and cooperation between the major commercial entities, the San Diego Bay Pilots, and the Navy's "Control One" organization seems adequate, all are in agreement that there is room for improvement.

The HSC recommends that a system to facilitate an exchange of information regarding vessel movement be established in San Diego Harbor. This recommendation is being fulfilled.

Known Ship Movements are available from:

San Diego Unified Port District:	(619) 686-6345	www.portofsandiego.org
Coordinated Maritime Service:	(619) 374-3877	www.vesseltrafficadvisory.org
Navy Region SW Port Operations:	(619) 556-1433	

"Evaluate whether establishing or expanding a VTS system would serve to reduce vessel accident rates." (CCR §802(b)(9)(B)).

It is the opinion of pilots, commercial entities, and others, that a coordinated communication system would smooth the movement of shipping and eliminate delays. It will allow advance planning of both departure/arrival times and better planning of the actual passing of ships in the channel at the safest and most opportune point. These improvements will significantly reduce the risk of an accident.

"Provide recommendations for funding VTS systems and other projects."

A letter of Agreement has been executed between Core Partners, San Diego Bay Pilots, US Coast Guard, U.S. Navy, San Diego Unified Port District, and OSPR regarding a plan to implement a vessel traffic information system. State grant funds have been accepted for the project. A web based system that displays navigation, safety and vessel movement information is in effect. The San Diego Marine Information System (SDMIS) is in place and operating. Web site is <http://www.sdmis.com>. It provides an interactive chart, view of San Diego Bay, maritime information, winds, currents, tides, vessel schedules and site map.

IX. BRIDGE MANAGEMENT REQUIREMENTS

"Assess the current schedule for bridge openings, the adequacy of ship-to-bridge communications, and the physical limitations affecting vertical and horizontal clearance." (CCR §802(b)(7)(A)).

There is a single bridge spanning San Diego Bay. The San Diego/Coronado Bridge has 195 feet of vertical clearance over the two middle channel openings with a horizontal clearance of 600 feet. The charts for the Bay show an in-bound lane between piers 18 and 19, and an out-bound lane between piers 19 and 20. It is accepted practice in San Diego Harbor to use the span between 19 and 20 for both directions of traffic, if the channel is clear.

X. COMPETITIVE ASPECTS

"Identify and discuss the potential economic impacts of implementing the provisions of the harbor safety plans; and describe the significant differences in the restrictions that could vary from port to port within the harbor area." (CCR §802(b)(11)(A), & (B)).

The Harbor Safety Committee for the Port of San Diego has determined that the Harbor Safety Plan outlined herein should have a minimal additional economic impact upon the maritime industry, the Port Authority, tenants and users of the Port, and the surrounding community.

Nothing in the San Diego Harbor Safety Plan would put the Port of San Diego at a competitive disadvantage with other ports within the United States. However, as with all long range outlooks, we do suggest the possibility of future unknown fiscal impacts on the Port, the maritime industry, and the local community, based upon needs, requirements, or legislation that are all unknown at this time.

An evaluation of the economic impact of the San Diego Harbor Safety Plan will be conducted as recommendations are made and implemented. It was the determination of OSPR that the tug escort regulations did not impose a significant economic impact.

XI. PROJECT FUNDING

"Provide recommendations for funding VTS systems and other projects." (CCR §802(b)(10)(A)).

San Diego Marine Information System (SDMIS) Project Funding

The San Diego Unified Port District (District) is a signatory to a Maritime Partnership Letter of Agreement between the District, State of California Office of Oil Spill Prevention and Response (OSPR), U.S. Coast Guard, U.S. Navy and San Diego Bay Pilots Association, Inc. Aimed at improving waterway safety in San Diego Bay, representatives of these entities evaluated the various factors effecting the safe navigation of vessels in San Diego Bay and identified improvements that would benefit maritime safety. A web based information and operating system that provides real time marine information to a multitude of San Diego Bay users has been installed. The system includes electronic chart with point and click information overlays for port services, hazards, security zones, construction projects and marine events; environmental sensors for wind, and current speed and direction; identification of environmentally sensitive areas with detailed management and protection information; digital video camera coverage of select San Diego Bay facilities and waterways; central information hub for San Diego Bay operating requirements, weather, and vessel scheduling; programmed and real time deep draft vessel maneuvering areas; and pre-programming for display and monitoring of AIS/GPS transponder equipped vessels. The

OSPR has provided grant funds to the District for the installation and operation of the marine information system. The District has agreed to administer the grant funds to build the marine information system, retain ownership thereof, and operate the system. As of September, 2000, the District is preparing a Request for Proposals to Develop and install the SDMIS.

Boater Education

A grant was obtained from BOAT/U.S. which funded development and distribution of 250 laminated signs for posting in marinas, four permanent signs for posting at boat launch ramps, 1,000 black and white rule 9 flyers for distribution by regulators, and production and copying costs for a video to demonstrate the problem of vessel traffic in the navigation channel. In-kind support for the Port District has been volunteered for assistance and general support for the educational signage regarding Rule 9. The U.S. Coast Guard could be a source for funding for buoyage changes, signage, and marina posting. The U.S. Coast Guard Auxiliary already produces many boating safety materials and could be encouraged to support some of the recommendations herein.

OSPR developed an Education Outreach Proposal to reduce the amount of petroleum products entering California's waterways. This program incorporated a number of the HSC education recommendations. The proposal is attached as Appendix L.

"Consider the imposition of user fees, and assess existing billing mechanisms as potential funding sources." (CCR §802(b)(10)(B)).

In view of the above advantages accruing to all concerned, it is anticipated that funding could be provided on a shared basis, from all the economic beneficiaries of such a system, while concurrently providing a safer San Diego Bay for all of its users.

XII. ENFORCEMENT

"Include suggested mechanisms that will ensure that the provisions of the plan are fully, uniformly and regularly enforced." (CCR §802(b)(8)(A)).

The goal of the Harbor Safety Committee is to prevent an oil spill in San Diego coastal, harbor, and estuarine waters. The effectiveness of the Harbor Safety Plan hinges on the enforcement of navigational laws and practices and on fostering a cooperative ethic among those who use the Bay. This will necessarily require the commitment of the enforcement agencies to enforcement of the current laws regarding boats and vessels on the Bay. The Committee is committed to strong enforcement of speed limits, rules of the road, and adherence to Rule 9 as imperative for safety of navigation to be improved in San Diego Bay.

U.S. Coast Guard has primary authority for enforcement on the Bay, although the Harbor Police share enforcement responsibility. It has been noted by the Committee that Harbor Police personnel must observe a violation to issue a citation. Efforts to support reporting of Rule 9 and other violators were supported through increased coordination and communication between commercial pilots and San Diego Harbor Police. Harbor Police are now issuing citations and distributing Rule 9 flyers.

The Coast Guard Marine Event Permit process includes notification of all agencies that may have an interest in permitted activities. However, regulations do not require all races to be permitted, i.e. sailboat races that do not directly impede traffic and comply with Inland Rules of the Road.

XIII. HARBOR SAFETY COMMITTEE RECOMENDATIONS

Recommendation 1: (1997) Additional dredging of the navigational channel be accomplished to provide an 800 foot wide channel from sea to Buoy R"20".

Ongoing Recommendation. Funds currently not available for dredging.
See 1997 Ship Control Simulation of Channel Transit contained in the archives.

Recommendation 2: (1993) The HSC requests that the intensity of the lights be increased on the navigational range lights.

Ongoing Recommendation. The technology does not currently exist to increase the intensity of the range lights.

Recommendation 3: (1993) Continue clearing hazards in the area west of the channel near the 24th Street Marine Terminal turning basin to allow for tug maneuvering. The HSC supports the ongoing effort of the San Diego Unified Port District to clear the area of hazards.

Ongoing Recommendation.

Recommendation 4: (1993) Educate marine VHF radio users about the authorized use for the various radio channels (highlighting channels recreational boaters are not allowed to use), and proper radio power settings to limit transmission carry-over (interference).

Ongoing Recommendation.

Recommendation 5: (1993) Encourage submission of communication violation reports by the Harbor Police, USCG, and Bay Pilots identifying violators to the FCC.

Ongoing Recommendation.

Recommendation 6: (1993) Provide an educational program to successfully improve navigation safety in the Bay that has the following objectives: 1) increase awareness of navigational rules, safe operation, and limitations of large vessels; 2) improve qualification standards of recreational boaters; and 3) targeted enforcement.

Ongoing Recommendation.

Recommendation 7: (1993) Post signs in marinas, boat launching ramps and frequently used boating areas that warn of the danger of boating near large vessels and remind recreation boaters of the importance of Rule 9. These signs will contain two or three graphics depicting the result of interfering with a large ship and simple text reminding boaters of their obligation to respect Rule 9.

Recommendation Implemented. Monitoring of the signs is required, as some are subject to weathering. A supply of replacement signs is available.

Recommendation 8: (1993) Request that OSPR urge the California Department of Motor Vehicles (DMV) to continue to include Safe Boating flyers with each boat registration, reminding vessel owners of rules of the road and safe boating practices.

Ongoing Recommendation.

Recommendation 9: (1993) Publicize the availability and list of insurance agencies who offer discounts on insurance rates to those boaters who graduate from USCG Auxiliary or Power Squadron Safe Boating classes. Model “good boater” incentives on existing auto “good driver” rates.

Ongoing Recommendation.

Recommendation 10: (1993) Request the *San Diego Log* to feature “Do You Know...” pointers column on proper boating rules and environmental tips regarding safe boating in San Diego Bay. These would be selected from and provided by USCG Auxiliary materials, Port District Safe boating Guide, environmental Health Coalition’s *Baywatch-A Guide for Boaters*, and other existing sources.

Ongoing Recommendation.

Recommendation 11: (1993) Convene a meeting as part of “Safe Boating Week” with OSPR, Coast Guard, Pilots, yacht club racing committees, and recreational boaters to evaluate anticipated race courses for the season, potential impacts on large vessel traffic, and to discuss ways to avoid conflict in the channel.

Ongoing Recommendation.

Recommendation 12: (1993) Maintain and update a list of agency speakers and topics to be updated each year during the annual review of this plan. List to include agencies, phone numbers, and suggested topics upon which the group is prepared to speak. Make list available to public groups, marinas, yacht clubs, and other boating groups to raise safety issues and educate about the potential problems in the Bay.

Ongoing Recommendation.

Recommendation 13: (1993) Request the DMV to require non-professional licenses, similar to automobile driver’s licenses, for all boat operators. Funding could be provided through DMV registration fees.

HSC supports legislation requiring mandatory boater education.

Recommendation 14: (1993) Request that OSPR require rental agencies on the Bay to require all renters to read and initial (indicating understanding) of Rules of the Road, rule 9, speed limits, wake rules, and boating under the influence regulations prior to execution of the rental agreement.

Ongoing Recommendation.

Recommendation 15: (1993) The HSC strongly recommends that a system to facilitate an exchange of information regarding vessel movement be established in San Diego Harbor.

Complete.

Recommendation 16: (1993) There are several possible sources of funding for VTS and other Harbor Safety Programs. These include: San Diego Unified Port District, U.S. Navy, U.S. Coast Guard, shipping owner/operators, OSPR, and a user surcharge.

Complete.

Recommendation 17: (1993) Explore options for requiring safe boating classes and/or Bay cleanup for those that are caught violating the law or otherwise endangering safety on the Bay.

Ongoing Recommendation.

Recommendation 18: (1993) Coast Guard should insure that all races are properly permitted and monitored.

Ongoing Recommendation.

Recommendation 19: (1993) Request that the Harbor Police and USCG be on patrol during peak periods of traffic.

Ongoing Recommendation.

PILOTAGE

Recommendation 20: (1993) The San Diego Harbor Safety Committee recommends that OSPR consider covering San Diego under State Pilotage Regulations. Until such oversight is in effect the San Diego Harbor Safety Committee makes Recommendations 21 through 27.

Recommendation 21: (1993) Pilotage rates should be sufficient to cover all costs associated with the operating expenses incurred in operating an efficient, safe and responsive piloting organization to secure the safety of the Port of San Diego.

Recommendation 22: (1993)*

1. The San Diego Board of Port Commissioners should consider raising tariff rates to raise pilot compensation levels adequate to ensure a safe operating system by avoiding attrition of authorized pilots, licensed state pilots, certified deputy pilots, or qualified pilot applicants.
2. In considering compensation levels; the Board should give consideration to other relevant factors including, the Florida Piloting Statutes (April 4, 1994), Journal of the House of Representatives Section 310.151-Rates of pilotage: Pilotage Rate Review Board and the factors given in the Cal Jur 3d Ships and Shipping, Harbors and Navigation Code for San Francisco Bay, and the national average.

*Note: Most recent pilotage rate increases were 10%, approved by Port Commissioners 8/15/97, and 11.86%, effective 7/12/99.

Recommendation 23: (1993)**

The rules and regulations promulgated in the Port Tariff reflect the premise that: (1) The Port of San Diego should recognize an organization as having exclusive authority, to the extent not provided otherwise by federal law, to pilot vessels from the high seas to and within San Diego Bay and returning to sea; (2) No ship's master or crew member should be permitted to pilot his own vessel in San Diego if subject to pilotage by tariff; (3) Safety is best served by implementing compulsory pilot service for all vessels of 300 hundred gross tons or more, barges carrying hazardous cargo and all oil barges whether empty or carrying cargo; and, (4) In order to provide professional judgment of

the qualifications and suitability of a pilot candidate the Board should consider for designation and authorization only those federally licensed applicants endorsed by the recognized organization.

****Note:** Effective 8/15/1997, Port Commissioners amended the Port Tariff Pilotage Rules to require any vessel over 300 gross tons operating within the bay to use a pilot unless a special exemption is granted by the Captain of the Port.

Recommendation 24: (1993) It is recommended that the pilot office be relocated to the vicinity of Ballast Point or as near to the southern end of Shelter Island as possible and that the pilot boat be berthed adjacent to the station. This location would provide a view down channel offering:

- A) Real time knowledge of sea and weather conditions;
- B) Quick response to inbound vessels; and,
- C) Sight inbound vessels on occasion and prevent problems with 'inbounders'.

The pilot office should be adequately equipped.

Recommendation 25: (1993) 1) The recognized pilot organization should write a formal pilot training program to include continuing development of pilots already qualified. 2) The Port of San Diego should establish a funding mechanism such as a surcharge to provide funds for a formal training program.

Recommendation 26: (1993) It is recommended that a review and analysis be undertaken, to the extent possible, for the naval pilotage system as it relates to oil tanker and other vessel traffic through San Diego Bay and the area covered by the HSC.

Recommendation 27: (1993) The HSC supports the Coast Guard rule making process which would mandate federal pilotage in San Diego Harbor. Furthermore, the Harbor Safety Committee recommends that OSPR support this process to the extent possible.

The San Diego Harbor Safety Committee Members over the past eight years have developed numerous Recommendations to improve the safety of San Diego Bay with the intention of reducing marine accidents and the possible resulting oil spills. Members of the Committee have worked diligently to implement those Recommendations.

HARBOR SAFETY COMMITTEE ACCOMPLISHMENTS...

1. Publish information regarding the effects of sea and swell conditions in the main channel in the Coast Pilot.
2. Investigate the relocation of Buoys 16, 17, and 19; the elimination of Buoy 16A. A series of three Ship Simulation exercises using computerized interactive ships was carried out at Marine Safety International in 1997 to study this issue.
3. Relocate Buoy "SD1" approximately one mile east placing it in line with the entrance range.
4. Install additional gated pair entrance Buoys. Eliminate Buoy "3".
5. Install frequency agile, dual frequency X and S band Radio Beacons (RACON) at the center span of the Coronado Bridge and Buoy SD"1".

6. Clarify the signage on Zuniga Jetty.
7. Prohibit anchoring between the main ship channel and Shelter Island.
8. Supply the Harbor Police with flyers to distribute to boaters from their patrol boats describing Rule 9.
9. MOU between Bay Pilots and Navy concerning communications.
10. Develop and install permanent signs at four public launch ramps graphically depicting Rule 9 information.
11. Post educational Rule 9 signs at every marina and most marine businesses in San Diego Bay.
12. Produce and install Rule 9 decals on rental boats.
13. Develop a Speaker's Bureau. A list was developed soliciting participation by a wide range of volunteer speakers. A news release was submitted to the boating industry and major media. A mailing list of 22 boating and bay related groups was developed to receive the list of speakers.
14. Publicize availability of boater insurance rate discounts for graduates of safe boating classes.
15. Receive news media coverage for HSC education issues.
16. Provide Rule 9 education materials at Coast Guard "Safe Boating Week" open house and at the festival "Day at the Docks".
17. Grant funds were applied for and obtained for HSC recreational boater education projects.
18. To aid in enforcing Rule 9, Pilots supplied with Harbor Police's dispatch number to immediately warn or ticket violators.
19. Minimum Visibility Guidelines established and published in Coast Pilot.
20. Underkeel Clearance Guidelines established.
21. Tug Escort Regulations established.
22. Funding obtained and consortium formed to develop VTIS system.
23. Addition of two more permanent aids to navigation to North Island mitigation area.

XIV. IMPLEMENTATION

Specific information on implementation is contained in Appendices B and P. Many of the actions include requests for investigations by the USCG, CalTrans, OSPR and the San Diego Unified Port District. In addition, the HSC will form teams to implement education and pilotage recommendations. A copy of the OSPR Detailed Regulatory Compliance Review of the San Diego Harbor Safety Plan dated September 17, 1993 is archived. The OSPR strategy for implementing the plan and plan implementation schedule dated February 14, 1996 is attached as Appendix M.

The HSC has appointed an Education Subcommittee that evaluates and implements recommendations concerning the need for establishing and upgrading existing educational or public awareness programs for all waterway users.

XVI. ENACTED REGULATIONS

GUIDELINES FOR UNDERKEEL CLEARANCE IN SAN DIEGO BAY

These guidelines are for underkeel clearance during the normal range of weather conditions for San Diego Bay and its entrance channel. Generally, a maximum 34 foot still water draft provides an adequate safety margin for vessels entering and transiting the bay, and mooring at berths with at least 35 feet charted depth. This guidance sets forth recommended limits for vessels whose draft may equal or exceed 34 feet due to vessel loading, trim, list, squat, and heave. Any adverse weather conditions or abnormal bottom changes will require a case by case re-evaluation.

Underkeel clearance is understood to mean the minimum calculated clearance between the deepest point on the vessel and the bottom after tide (plus or minus), trim, list, squat, and expected heave due to the existing sea swell condition are taken into account. The underkeel clearance margins set forth in this guide provide the safety factor necessary to account for unpredictable variations in the bottom, the height of tide, vessel squat, and response of the vessel to the sea conditions.

<u>Geographic area of San Diego Bay</u>	<u>Underkeel Clearance Margin</u>
a. Channel Entrance, between Buoy SD and Buoys 9 & 10	4 feet
b. Main Channel, between Buoys 9 & 10 and Buoys 40 & 41	2 feet
c. Outside of Main Channel and at any berth*	1 foot

Notes:

If the depth of the berth or anchorage for vessels to be moored, loaded or unloaded at a berth, or anchored when the published tidal depth within the next 24 hours (or the period prior to the vessel's departure, whichever is longer) will be less than the vessel's draft plus 1 foot, the vessel master, owners, operators, charterers or agents and the pilot shall first notify the U.S. Coast Guard Captain of the Port San Diego, the San Diego Unified Port District Marine Operations Department, and the San Diego Bay Pilots Associations, Inc. The notification by the vessel master, owners, operators, charterers or agents shall include the vessel's cargo operations plan for maintaining the recommended underkeel clearance at all times. A contingency plan should be outlined to take into account unexpected delays caused by mechanical failures of loading/unloading equipment or labor problems that may prevent a vessel from being unloaded and departing on schedule.

* An estimate for squat can be calculated by using the formula:

$$\begin{aligned}\text{Squat (in meters)} &= C_b \times (V^2 \div 100) \\ \text{where } C_b &= \text{vessel's block coefficient} \\ V &= \text{vessel's speed in Knot}\end{aligned}$$

BALLAST WATER REGULATIONS

"Vessel ballast procedures or requirements." (CCR §802(b)(12)(A)2.).

On September 21, 1992, the Governor of California approved Assembly Bill No. 3207. The bill requires the Department of Fish and Game to adopt specified guidelines as the policy of California in order to prevent the introduction and spread of aquatic nuisance species, as defined, into any river, estuary, bay, or coastal area through the exchange of ballast water of vessels prior to entering those waters.

The bill is codified in California Fish and Game Code §§6430 et seq. §6432 mandates that the department adopt the International Maritime Organization's (IMO) "Guidelines for Preventing the Introduction of Unwanted Aquatic Organisms and Pathogens From Ships' Ballast Water and Sediment Discharges" as adopted on July 4, 1991. The relevant California Fish and Game Code sections are archived along with a copy of the IMO Guidelines.

NON-TANKER REGULATIONS

SEE ARCHIVES (PENDING).

TUG ESCORT REGULATIONS

SEE ARCHIVES (PENDING)

OIL POLLUTION ACT OF 1990

SEE ARCHIVES or www.dfg.ca.gov/ospr

XVI. MISCELLANEOUS

"Address any additional issues deemed necessary by the harbor safety committee that could impact safe navigation in the harbor including but not limited to: vessel pilotage." (CCR §802(b)(12)(A)1.).

PILOTAGE EVALUATION

Pilotage in San Diego Bay is regulated by the Board of Port Commissioners of the San Diego Unified Port District in accordance with the San Diego Unified Port District Act (California Harbors and Navigation Code, Appendix 1). The Board assumed regulation of the San Diego harbor pilots in January 1971. This action followed the elimination of the Board of Pilot Commissioners for the harbor of San Diego resulting from the Governor's action to reorganize the executive branch of the California State Government and in the Reorganization Plan of 1969.

It is not mandatory that foreign vessels, U.S. vessels in foreign trade, or U.S. government vessels take a pilot in San Diego Bay. However, certain of these vessels are required to pay a portion of the normal pilotage fees if the services of a Port pilot are not utilized.

Rules and regulations adopted by the Board govern pilots and pilotage within San Diego Bay. The Board's regulations address: the authorization and certification of pilots; qualifications for pilots including license and physical examination requirement; pilot rules of conduct; insurance; and pilot accountability including various reports required of pilots. The charges (rates, fees), rules pertaining to pilotage, and conditions upon which pilotage is provided, including a description of vessels subject to pilotage, are contained in the Port's tariff.

The Board determines, from time to time, the number of pilots required and by resolution designates the persons authorized to perform pilot services in an independent capacity and not as an officer, employee, agent, or independent contractor of the Port District.

Four Authorized Pilots for the Port of San Diego are organized as a single group and provide pilot services under the business name of San Diego Bay Pilots Association, Inc. A fifth pilot is retired, but retains status as an 'Authorized Pilot.' The Port District does not specifically require that the pilots join together in association. A 52-foot pilot boat was purchased in 1996.

The pilots maintain their own training program that includes training under the senior pilots prior to and following their designation by the Board.

Approximately 1,600 piloting tasks were performed during 1992 with an average task of between 1.5 and 2.5 hours. The pilots administer their own work schedule through their Association and distribute the piloting tasks workload by a system of rotating periods of on-duty, stand-by, and off-duty/vacation shifts. The Navy had 2,180 piloting tasks in 1998.

COMPULSORY PILOTAGE

The Coast Guard has indicated that it is engaged in the rule making process which is intended to mandate a federal licensed pilot be on board all vessels subject to pilotage when underway in any port in California. There is currently a Memorandum of Understanding under consideration between the State of California and the U.S. Coast Guard. The draft memorandum is contained in the archives.

The Full Committee created Pilotage (to examine all aspects of pilotage on San Diego Bay) and Education (to implement the educational recommendations) Subcommittees and referred the appropriate recommendations to them.

PILOTAGE SUBCOMMITTEE ACTIONS

An analysis of commercial pilotage in San Diego Bay resulted in the following recommendations from the Harbor Safety Committee regarding pilotage. These recommendations are included in Chapter XIII. The full report with findings and adopted tables is archived.

Limited Visibility Guidelines

"Navigation in reduced or restricted visibility." (CCR §802(b)(12)(A)4.).

Currently, there are no requirements regarding navigation in reduced or restricted visibility beyond Rules of the Road. The Committee recognizes that there should be a greater standard of care for movement of vessels in poor visibility. The Committee feels that it is important to establish guidelines for navigation in limited visibility and intends to develop these guidelines. The HSC adopted the following guideline in FY 96-97 and submitted it to NOAA for inclusion in the next U.S. Coast Pilot 7:

No vessel over 1600 designed displacement tons should transit the Coronado Bay Bridge in low visibility if the bridge is not held visually within stopping distance. Tank ships or barges carrying petroleum products, explosives, or hazardous materials should not commence a movement in the approaches to or in outer or inner San Diego Harbor, with a visibility of less than .5 nautical mile (1,000 yards).

"Maintenance dredging necessary for safe vessel operation." (CCR §802(b)(12)(A)5.).

With the proposed relocation of Buoy 16, 17, and 19 and the removal of Buoy 16A, the Army Corps of Engineers has been contacted to examine the possibility of some minor dredging to widen the navigation channel to accommodate large vessels at this turn in the channel. The next planned dredging of the channel began in 1996. The Navy standard for depth beneath the keel is 3 feet minimum.

The Navy has prepared a Programmatic Environmental Impact Statement (PEIS) for eight major maintenance and expansion dredging projects planned for San Diego Bay. This includes maintenance dredging at Pier 180, Pier BRAVO, and Main Channel Dredging to include 490,000 cubic yards of sediments from the areas and approaches around Piers 11-13, the Seventh Street and Chollas Creek Channels. Ongoing dredging is planned to accommodate a small craft berthing pier at the Naval Amphibious Base; Patrol Boat Coastal Berthing at the Amphibious Base, Piers 2,3 and 8 to accommodate increased number of home-ported deep draft intensive ships and proposed home-porting of up to four Nimitz Class aircraft carriers at NAS North Island. The total dredging for these projects is expected to exceed 11 million cubic yards of sediment. The complete description of the proposed dredging from the PEIS is contained in the archives.

Additional areas of investigation by the Harbor Safety Committee...

PIPELINES, GAS LINES AND OTHER PIPES THAT CARRY OIL AND FUEL PRODUCTS IN THE SAN DIEGO BAY WATERSHED.

Three major pipelines move fuel around and under San Diego Bay. A jet fuel pipeline carries jet fuel from Pt. Loma to Naval Air Station North Island. This pipeline runs underneath the mouth of San Diego Bay. A pipeline also carries jet fuel from Pt. Loma to Miramar Naval Air Station. San Diego Gas and Electric also has a pipeline in National City. A task force was formed to investigate the presence of pipelines that could affect San Diego Bay. The MOU between the California State Fire Marshall and the California State Lands Commissions details the agreement between these agencies regarding jurisdiction over pipelines from marine terminals. Applicable sections are contained in the archives.

APPENDIX

Appendix

- A Past Committee/Subcommittee Chairs-Subcommittee Members**
Annual Review Dates
- B Resources for Emergency Response - Environmental Clean-Up,
Firefighting, and Salvage**
- C Sample of Rule 9 Sign Posted at Marinas and Launching Ramps**
- D Port of San Diego Marine Operations - Monthly Vessel Log Reports**
- E Port of San Diego Tonnage Reports for Fiscal Year 1999**
- F Naval Ship Movements**
- G Navy Fuel Depot Totals**
- H Coast Guard Marine Casualty Statistics**
- I Coast Guard Summary of Spills and Incidents**
- J WAMS Report**
- K Encina Marine Terminal**
- L OSPR Outreach Program - 1995**
- M OSPR Strategy for Implementation of Plan**
- N List of Archives Items**
- O List of Changes to San Diego Harbor Safety Plan**